

Electricity

QUESTION 1:

1. Miss van der Merwe does a practical investigation with her grade-8 students. The goal of the investigation is to determine the influence of the amount of light bulbs connected in series on the brightness of the light bulbs. She sets up the following circuit:

Method:

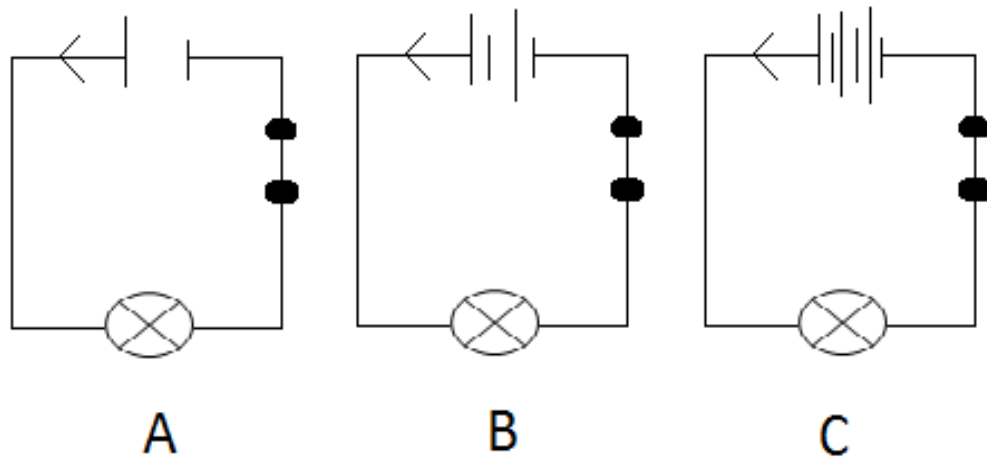
1. Connect three 1,5 V **cells** in series.
2. First connect one and then two and lastly three identical **light bulbs** in series.
3. Connect the components together with **conductors**.
4. Make sure the circuit is **closed**.

Answer the following questions by using the information given:

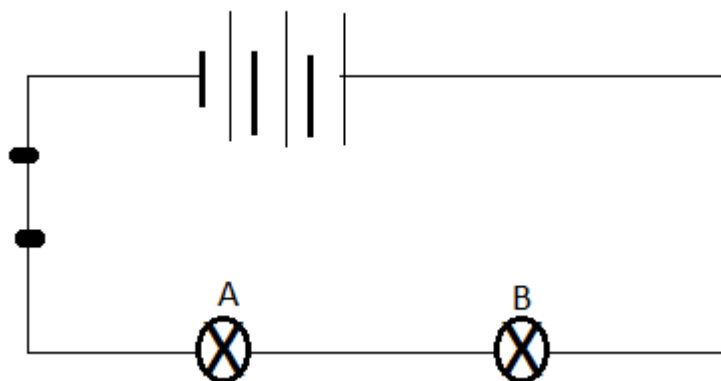
- 1.1 Write down an **investigative question** for the investigation.
- 1.2 Write a hypothesis for the investigation.
- 1.3 Draw a circuit diagram used in the investigation.
- 1.4 What is the independent variable?
- 1.5 What is the dependent variable?
- 1.6 Describe the observations that will be made during the investigation.
- 1.7 Write a conclusion for the investigation. Explain your answer in terms of **resistance** and **current strength**.

QUESTION 2:

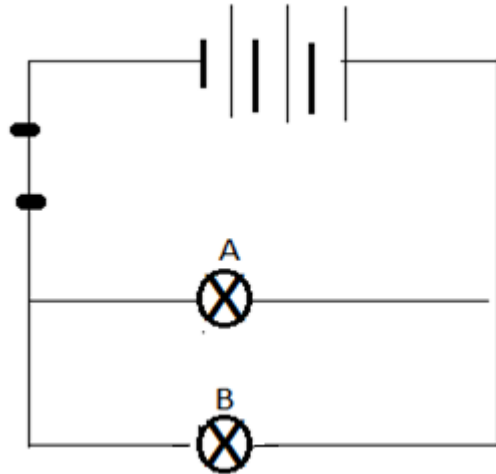
2. The following three circuits are set up. The cells are identical (1,5 V each) and the light bulbs are also identical.



- 2.1.1 Which one of the 3 circuits, A, B or C's light bulbs will burn the brightest? Give a reason for your answer.
- 2.1.2 Compare the resistance offered against the current in circuits A and C.
- 2.2 Study the circuit and answer the questions. Identical 1,5 V cells and identical light bulbs are used.



- 2.2.1 What will happen to the brightness of light bulb A when light bulb B blows? Give a reason for your answer.
- 2.2.2 What will happen to the current strength when light bulb A is removed from the circuit and it is closed again thereafter?
- 2.3 The following circuit is set up:

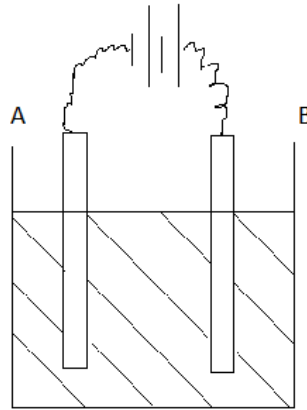


- 2.3.1 In what type of connection are light bulbs A and B placed?
- 2.3.2 What will happen to the brightness of the light bulbs when another light bulb, light bulb C, is connected in parallel with A and B?
- 2.3.3 How is the total current strength influenced when light bulb C is placed in the circuit?

Effect of Electricity:

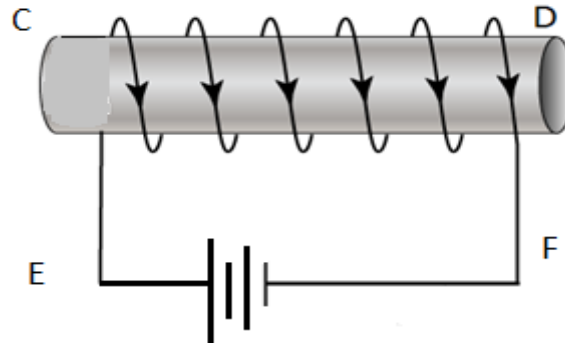
QUESTION 1:

- 1.1 Which effect of electricity is applied in each of the following cases:
 - A. light bulb
 - B. electroplating
 - C. doorbell
- 1.2 Study the following sketch:



- A. Which process is represented here?
- B. If the solution is copper chloride, what are the electrodes made of?
- C. What forms at A and B respectively? Explain fully.
- D. What do we call electrode A and B respectively?

1.3 Study the following diagram and answer the following questions:



- A. Is current direction from E to F or F to E?
- B. Where are the N and S poles is the current flows?
(Use letters)
- C. How is the N pole determined? Explain the rule used.